

CLAIMS

Sub, B

1. A method of improving electrical conductivity of lines comprising transparent conducting material carried on a substrate, comprising the step of forming the lines of transparent conducting material on the substrate and providing on the upper surface of each of the lines a covering layer extending from an end part of the line and partially covering the upper surface of the line, and the step of subjecting the lines to a metal electroplating process in which a plating potential is applied to each line at the end part whereby a metal layer is plated on the exposed surface area of the line, the covering layer serving to shield the underlying surface of the line during the plating.

2. A method according to Claim 1, wherein the covering layer is shaped such that the exposed surface of the line increases progressively away from the end part.

3. A method according to Claim 2, wherein the covering layer tapers in width away from the end part.

4. A method according to Claim 2, wherein the covering layer is stepped in width along the line.

Sub A

5. A method according to any one of Claims 1 to 4, wherein the covering layer extends from both ends of the line in similar manner and the plating potential is applied at both ends of the line during the plating process.

6. A method according to any one of Claims 1 to 5, wherein the covering layer comprises photoresist.

7. A method according to any one of Claims 1 to 6, wherein the step of forming the lines comprises:
depositing a layer of transparent conducting material over the substrate,

Sub A1
depositing a photoresist layer over the layer of transparent conducting material and patterning the photoresist into a configuration corresponding to the desired lines,

- 5 patterning the transparent conducting layer using the photoresist to leave the lines of transparent conducting material.

Sub B1
8. A method according to Claim 7, wherein the photoresist layer is patterned into portions corresponding to the desired lines with each portion including a selected region having a first thickness and conforming with the form of the required covering layer with the remainder of the portion being of reduced thickness, and after patterning the transparent conducting layer the photoresist is partially etched to remove the areas of reduced thickness while leaving photoresist at the selected region which photoresist constitutes the covering layer.

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9. A method according to Claim 7 or Claim 8, and for use in the manufacture of a pixellated device comprising pixel electrodes of transparent conducting material carried together with the conductive lines on the substrate, wherein the photoresist layer is patterned into a configuration corresponding also to the desired pixel electrodes, and wherein the transparent conducting layer is patterned using the photoresist to leave pixel electrode regions.

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10. A method according to Claim 9, wherein photoresist is left over the pixel electrode regions during the electroplating process.

25 11. A method of forming an active plate for a pixellated device, comprising:

depositing and patterning a gate conductor layer over an insulating substrate;

- 30 depositing a gate insulator layer over the patterned gate conductor layer;

depositing a silicon layer over the gate insulator layer;

depositing a transparent conductor layer over the silicon layer;

depositing and patterning a photoresist layer over the transparent conductor layer having a configuration defining source and drain areas, pixel electrode areas and conductor line areas associated with the source or drain conductors;

patterning the transparent conductor layer using the photoresist to form source and drains, pixel electrodes and conductor lines;

defining the photoresist to leave a photoresist region on each conductor line extending from one end part of the line partially covering the surface of the line;

and selectively electroplating the exposed areas of the transparent conductor lines with a metallic layer with a plating potential being applied at the end part of each line.

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12. A method according to Claim 11, wherein the photoresist layer is patterned into areas of different thicknesses at the conductor lines and wherein the step of defining the photoresist comprises partially etching the photoresist to remove the thinner areas.

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13. A method according to Claim 11 or Claim 12, wherein the photoresist is defined to leave on each line a similar photoresist region extending from the other end part and wherein the plating potential is applied also at that other end part.

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14. An active matrix liquid crystal display device comprising an active plate made according to any one of Claims 11 to 14, a further substrate carrying an electrode structure spaced from the active plate, and liquid crystal disposed between the active plate and the further substrate.